

1486. S 48.

G. H.

PROPOSALS

For ENRICHING the

PRINCIPALITY

O F

K W A L E S :

HUMBLY SUBMITTED TO

The Consideration of his Countrymen,

By GIRALDUS CAMBRENSIS.

“ Whoever can make two ears of corn, or two blades of grafs to grow
“ upon a spot of ground where only one grew before, will deserve
“ better of mankind, and do more essential service to his country,
“ than the whole race of politicians put together.”

GULLIVER'S TRAVELS.

Hoc opus, hoc studium parvi properemus & ampli,
Si patriæ volumus, si nobis vivere cari.

HOR.

The SECOND EDITION.

G L O C E S T E R,

PRINTED BY R. RAIKES, FOR THE AUTHOR;

AND SOLD BY

R. AND J. DODSLEY, AND J. MILLAN, IN LONDON.
M. DCC. LXII.

PRICE ONE SHILLING AND SIXPENCE.

PROPOSALS

FOR PRINTING

OF

OF



W. A. S. E.

The Condition of his Countrymen

BY GERALDUS CAMBRINENSIS.

W. A. S. E. has made two copies of two parts of this work, and has given a copy of each to the University of Cambridge, and has also given a copy of each to the University of Cambridge, and has also given a copy of each to the University of Cambridge.

It is printed by the University of Cambridge, and is sold by the University of Cambridge, and is also sold by the University of Cambridge.

THE SECOND EDITION.

W. A. S. E. R.

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TO THE
NOBILITY, GENTRY, CLERGY, and
YEOMANRY,

OF THE
PRINCIPALITY
OF

W A L E S,

T H I S E S S A Y,

CALCULATED FOR

The Improvement and Benefit of that PRINCIPALITY by AGRICULTURE and COMMERCE,

IS HUMBL Y INSCRIBED BY

Their Well-wisher and Servant,

LONDON, May, 1762.

The Author.

TO THE
 NOBILITY, GENTRY, CLERGY, AND
 YEOMANRY,

OF THE
 PRINCE OF WALES
 LIBRARY



W A L
 E S
 THIS ESSAY
 calculated for

The Improvement and Benefit of the Prince
 of Wales by Agriculture and Commerce
 is humbly inscribed by

John W. L. Esq. and General

The Author

LONDON, May 1758

PROPOSALS

For ENRICHING the

Principality of WALES.

Turn to the arts, the useful pleasing arts
Of cultivation; and those fields improve
Your erring fathers have left too long despis'd.
Leave not to ignorance and low-bred hinds,
That noblest science, which in antient time
The minds of sages and of kings employ'd,
Sollicitous to learn the ways of God,
And read his works in agriculture's school.

PUBLIC VIRTUE, a Poem. By Mr. DODSLEY.

THAT the wealth of every nation
is proportionable to the * number
and industry of its inhabitants, is
a truth that will admit of no dispute. What-
ever therefore contributes towards increasing
the number of individuals in any country,
and

* Sir WILLIAM TEMPLE, in his observations upon the United Netherlands, has proved to a degree of demonstration, 'that the
'ground of trade cannot be deduced from havens, or native com-
'modities,

and has a tendency to quicken their industry, must add to the wealth and power of that country.

THE following scheme is calculated to promote these ends in the principality of Wales. If the natives of that country will divest themselves of prejudice and consider it with attention; it is hoped the reasonableness and propriety of these proposals will appear, and sufficiently recommend them to their approbation. To see a better plan would be the greatest satisfaction to me: but to see, even this adopted and happily executed would give me uncommon pleasure.

THAT the principality of Wales can justly boast of many of those advantages, which are

‘modities; but from the number, industry, and parsimony of the ‘inhabitants.’ But if a country, such as that of the United Netherlands, which has neither native commodities, commodious havens, a wholesome air, nor good water, has been raised to an incredible pitch of power and greatness, by the number and diligence of its people; to what height of majesty and grandeur might not the inhabitants of Wales arrive, who can justly boast of the finest havens, and all the desirable native commodities, were they to exert the same degrees of industry and parsimony, that have rendered those ONCE-DISTRESSED STATES rich, formidable, and mighty?

are thought to contribute towards rendering the people of any country numerous, no one will doubt who considers that our liberties and properties are secured ; that all sects and parties are tolerated in the free exercise of religion, according to their respective opinions and manner of worship ; that our situation is preferable to that of most, if not all other countries ; that Milford is one of the finest havens in the world ; that we have a great number of other very convenient ports ; and that we abound in those native productions, which are justly reckoned the staple commodities of several countries in which trade and commerce flourish.

If we were nicely to inquire why the natives withdraw themselves from a country that can boast of these advantages, and why this country is so thinly inhabited, some of the chief reasons would appear to be a *scarcity of most of the necessaries of life, and the want of domestic industry.*

Now whatever country abounds in the necessaries of life, must also abound in the lower

lower class of people. For wherever the necessities of life are cheapest, thither all sorts of people, but more particularly the industrious, will resort. But the necessities of life, if the directions laid down in these papers are followed, will be cheaper in Wales than in any other part of his majesty's dominions. An inducement this, not only to keep our countrymen at home, but likewise to invite and bring over others to settle amongst us. The numbers, who annually withdraw * themselves from us, and spend the remainder of their days in London, Bristol, Liverpool, Chester, and other parts of England, are incredibly great, and the annual loss of their labour amounts, upon a moderate calculation, to 24,750*l*. But these natives, if they could advantageously, would gladly be employed in their own country. In this case they would marry, increase and multiply; and the coming over of English, Irish, &c. would make, probably, no inconsiderable addition to the number of our inhabitants. Our improvements would then become

non ullus aratro
Dignus honos: squalent abductis arva colonis.

VIRGIL.

become the subject of admiration, would raise the world into a fit of wonder; and what was once said, upon a different occasion, might with strict propriety be applied to us—*See how the Britons flourish!*

As the means of producing this desirable abundance, I take the liberty of laying before my countrymen,

A METHOD *for improving their* ESTATES.

— Non modo est ars, sed etiam necessaria ac magna; ea est scientia, quæ docet quæ sint in quoquo agro secunda ac faciunda, quæque terra maximos perpetuo reddat fructus. VARR.

LAND, upon a medium, is let in two of the most fertile counties in Wales, at * three shillings an acre. If it appears that

B this

* Besides the fertility of these counties, they afford all the means of improvement that have been applied in the English counties, wherein these improvements have been made.

It may, probably, be objected to this estimate, that we have lands near large towns, which let at 10, 12, 15, nay 20s. an acre; and consequently

this was the case, not above thirty years since, in any of the counties of England, where at present the land, upon an average, is let at ten shillings an acre; it will not be unreasonable to suppose, as like causes are productive of like effects, that the same improvements may be made in Wales, provided our landlords and farmers will pursue the methods here recommended, which are used, with incredible success, in some parts of England.

WHAT is here asserted, with regard to the improvement of lands in England, is matter of fact; against which there is no disputing. But if any one of less experience doubts the truth of it, let him appeal to any of those gentlemen of our country, who are competent judges in these matters, and he will be abundantly convinced.

THE principal means, recommended in these sheets, for improving estates in Wales,

consequently that lands in general should be laid higher. Though the premises are granted, yet such a consequence is by no means deducible from them; for the quantity of land let at those high rates is very inconsiderable; whereas the number of acres let at 2s. 6d. 2s. 1s. 6d. 1s. 6d. and under that are incredible: so that I am persuaded I should have been nigher the truth, if I had laid the lands of the whole principality at half a crown an acre.

and

and enriching the inhabitants, are the following—*Claying and marling,—turnep-sowing,—fattening of cattle,—and the sowing of clover and rye-grass seeds.*

WHERE the lands are too light or sandy to produce good crops, it will be proper to give them a coat of clay of the yellow or blue kind, which is the best, though the brown or dark sort will do. On the other hand, where they are too heavy, cold or moist, they may be covered with a brown or white marl. Forty or fifty loads an acre are sufficient for some sorts of lands: for others, sixty or seventy will be found necessary; but, upon a medium, the quantity may be laid at sixty * cart loads an acre.

B 2

GREAT

* As this method of improving is attended with a considerable expence, it has been, and still continues to be, a rule with many landlords to grant their tenants a lease of their respective farms, for the term of twenty-one years; and, to encourage them, some landlords engage to pay for the digging, tilling, and spreading the quantity of clay or marl necessary for a certain number of acres, annually, for the space of ten or twelve years. Where the tenants are necessitous, 'tis certainly adviseable to close with such a proposal; by which, however, though productive of a present expence to the landlord, he is always the greatest gainer. But yet, such are the advantages arising from it to the tenant, that I could wish the landowners in Wales would assist their tenants in the same manner: for
under

GREAT are the improvements to be made, in all sorts of lands, by this single article of claying and marling.

THERE are, however, three sorts of lands where these methods will be found uncommonly successful, viz. *Old beath-ground—lands that have been impoverished, and quite worn out with continual plowing, producing more weeds than corn,—and old pasture-ground, whose surface is rendered uneven by ant-hills, or is covered over with beggarly moss.*

BUT the advantages arising from this method are most remarkable in *old beath-ground*, or that which has laid waste for a great number of years, and perhaps has never been ploughed at all, nor of any other use but

under these circumstances, tenants, who have been industrious and of approved fidelity, by the time their leases have been expired, those who have begun with 3 or 400 pounds, have often been found to be worth so many thousands, and sometimes 10, 12, or 15,000 pounds. That the value of estates should be raised, in the proportion above mentioned, (vid. p. 8.) when the tenant, at the same time, thus gets estates, is almost incredible, especially if we consider that hundreds of these farms were uncultivated and overgrown with fern, &c.

Neglectis urenda filix innascitur agris.

HOR.

as sheep's walk or warren. This kind of ground, in general, of all others, will produce the greatest crops, and answer the charge of claying and marling best.

THE method to be taken with this sort of ground is, To plough it up in winter, by reason of the moisture of that season, and that the flag or surface may have time to rot, during the time of claying or marling, before it be sown either with turneps at Midsummer, or with wheat or rye at Michaelmas. It should be ploughed and well harrowed four times before it is sown with turneps, and clayed or marled after the first or third ploughing, or before it is ploughed at all, just as it shall be most convenient for the farmer. Either method may be chosen. But if the land be clayed after the first ploughing, the clay and mould will incorporate the better, by means of the frequent ploughings that are to succeed, and be more likely to produce a good crop.

IF turneps should be sown about * Midsummer upon lands thus managed, they may generally without † tath or dung: but if wheat or rye about Michaelmas, then it will be proper either to fold sheep one night on every part of the ground, or to carry on 10, 12, or 15 cart-loads of dung on every acre; this with about 60 loads of clay or marl, drawn by four or five able horses, will seldom or never fail to produce extraordinary crops; and the land, which before, perhaps, has not been worth sixpence an acre, by this method, will be made worth ten or twelve shillings.

WHEN turneps are the first crop of this new-made land, they are to be fed off by sheep, or cows and oxen, or by both kinds of stock, whose treading more intimately mixes the clay with the natural soil, and separates its particles in such a manner, as to

* The properest times for sowing all sorts of grain are as follows; rye in September; wheat in October; oats and peas in March; barley in the beginning of April.

† Tath is the dung and urine of sheep, &c.

give a more easy entrance for the tender fibres of the corn to extract its virtue. Besides this, and which is of great consequence, the tath or dung and urine of bullocks, but especially of sheep, abounds with a saline and saponaceous quality of experienced service, and well known to contribute much towards vegetation : so that the barley-crop, which should always succeed the turneps upon land thus ordered, may be sown with the greatest assurance of success. Ten or twelve * combs an acre have been produced by this manner of improving land, of no more value, in an unimproved state, than what was mentioned above.—An increase highly sufficient to answer the owner's or the farmer's charge ; an increase that redounds to the reputation, as well as profit, of all the husbandmen who practise this method ; and which cannot but afford great encouragement to others to try the same.

THE ground should be ploughed three times for barley after turneps ; i. e. twice

* A comb is equal to four bushels, or what goes in Wales by the name of tel.

ploughed

ploughed and harrowed to make it clean and light ; and then the barley sown and turned in with the plough. Three or four days afterwards, the same ground should be sown with clover, about ten pounds an acre, and harrowed once over with light harrows ; or, which best suits this sort of land of which I am speaking, being for the most part of a light nature, about seven * or eight pounds of clover-seed with a peck of black and white nonsuch, or what is commonly called rye-grass. Either of these helps to thicken the set, makes the clover, which alone is not so † safe, a rich and more wholesome pasture for cattle, and comes on somewhat earlier in the spring than clover alone. If the ground be of a stiff and deep soil, clover alone is sufficient, because the roots strike deep and delight in a soil of that sort. Two good crops of clover may be had in one season ; or if it should be fed, it affords great plenty of grass, far exceeding the best old pasture-

* Some judicious farmers sow ten or twelve pounds

† Because cows, oxen, &c. when first put to clover in the spring, are subject to burst,

land. Wheat should generally be sown after clover, and it will commonly produce crops of equal goodness to those upon ground thoroughly summer-tilled. The clover-land should be covered with dung, and *that* turned in with the plough, the wheat sown above, and harrowed twice over. If rye-grass be mixed with the clover, the land should be ploughed twice, before the wheat is sown, in order to kill the rye-grass roots, otherwise they are apt to grow up with the wheat, and injure the crop. After wheat, turneps should succeed again, and so on in a continual round.

THIS is the best and most approved method of farming,—a method which seldom fails of producing good crops, and never balks the expectation of the farmer. There are, indeed, other methods in practice, such as taking a crop of peas or oats after barley : but this cannot be done without impoverishing the land, and giving an opportunity for many weeds to spring up, and making it very foul.

I HAVE been speaking of the advantages of claying or marling old heath-ground, such as has been almost useless, and has never, or however not for a long time, been ploughed. Instead of brakes, furz, or ling, you may have the first year a crop of turneps worth 30 or 40 shillings an acre; the next barley worth 50 shillings or three pounds, then clover, or clover and rye-grass worth two guineas an acre; and a crop of wheat worth four or five pounds. Very great advantages indeed! and although claying or marling be a considerable expence, amounting to 25 or 30 shillings an acre, yet that charge is answered and repaid, even in the first crop; but more abundantly afterwards, such ground producing good crops for twenty years successively, the virtue of clay being known to last so long. Such are the benefits of claying old heath-ground, which has not, for time immemorial, been ploughed.

VERY similar, though not quite equal, are the advantages of claying lands which
have

have been impoverished, and quite worn out with continual ploughing, producing more weeds than corn.

ITS effects are very conspicuous the first year. The crop is incredibly better; and the growth of weeds, so common and detrimental to poor land, is checked. This sort of land will be best clayed immediately after harvest, that the clay may be exposed to the winter's frost, which will make it sufficiently tender and mellow, and dispose it to mix better with the natural soil.—Or it may be clayed as early in the spring or summer, as the farmer's convenience will admit, with this caution only, that it be done early enough for ploughing the land three or four times before the turneps are sown. If these turneps are houghed once or twice over, the weeds are so checked as never to appear in like manner after. So that sowing turneps for the first crop after claying is certainly the most prudent method: for then the barley that follows will be clean, and the land in right order to receive clover and rye-grass

seeds, with which it should be laid down for a year or two; and then it will rise fit for wheat: for it is an indisputable maxim, that if land be laid down foul, it will be found so, when it comes again to be ploughed.

To plough up old pasture-ground, when its surface is rendered uneven by ant-hills, or is covered with a beggarly moss, is a most excellent method. It should be sown with white peas or oats the latter end of February, or the beginning of March, or about Lady-day, if it be a cold or wet soil. If these take, and prove a good crop, a stop is thereby put to the growth of all pernicious weeds, the land is mellowed, and becomes fit for wheat the Michaelmas following. As soon as the crop is off, whether peas or oats, the land should be ploughed, that the grain which is scattered in the time of harvest may have time to spring before the wheat is sown, else they grow together, and are injurious to each other.

AFTER

AFTER wheat turneps, then barley; * and if the ground be designed for pasture continually afterwards, hay or natural grass-seeds are proper to be sown in a larger proportion than was mentioned above †; But because these are often mixed with seeds of a different kind, neither good in their nature nor easily distinguished, it may be as well to sow clover-feed together with black and white non-such and white suckling, which make a most delicious feed, and ever remain better than what the old land produced before.

THESE four crops of peas or oats, wheat, turneps, and barley are all produced without tath or dung, the ground greatly improved, the surface of it made level and beautiful, and the succeeding pasture more in quantity, and better in quality. This

* The roller is a very useful implement in breaking the clods of stiff and heavy lands when first ploughed after a crop of turneps; it is frequently used upon wheat in the spring, and always upon lands laid down with grass seeds.

† Two bushels an acre at least,

method consequently recommends itself to the inhabitants of that principality for whose sake these observations were made.

THE leases, indeed, even in counties where farming is well understood, generally prohibit the breaking up of this sort of ground, under the penalty of five pounds an acre: but I think without reason; for there are many thousands of acres capable of improvement by this method, of being rendered more beautiful to the eye, and much more beneficial both to the landlords and the tenants.

THE land by this means would let for more; and it would be a more equal way of

NOTE. It may not be improper to observe, that to mow with the scythe all sorts of grain (wheat excepted) is by far the most expeditious, and, consequently, the least expensive method; barley or oats should be in swaths four or five days, and then be gathered with forks and carried, and the scattered remains raked up with a drag-rake; of which, and the method of using it, take the following description: The head is about seven feet long, the teeth five inches, and two inches and a half asunder; it is drawn by a man with a leathern strap over his shoulders, who begins at one corner of the field dragging across 'till the teeth are full, and then disengages the rake, and so continues 'till he has crossed the field; then returns in the same manner, always leaving the corn in a line, that it may be more easily gathered and carried away.

managing

managing it; because it would give other parts of the ground, which have been continually under the plow, time to rest and recover their strength and generative quality.

It must, however, be remarked in relation to old pasture-land, that if it be not sufficiently dry, it will never quit the cost to break it up. There are large parcels of this sort in most counties, where clay, or brick-earth, lies so exceedingly near the surface, that there is scarce mould enough to be raised for the nourishment of corn; besides its roots are so soaked in wet, because the water cannot sink through clay, that it, in a great measure, perishes. This * sort of ground, for these reasons, produces the least grass, and is the latest of any in the spring before it is fit for feed.

BEFORE I proceed to the other particulars, it will be proper to take notice of

* It would be a good method, in this case, to keep the ditches sufficiently deep, provided there be a fall for the water.

the † wheel-plow, which, according to the opinion of many very good judges, is greatly preferable to all other sorts; but, if I am not mistaken, the foot-plow is equally serviceable with regard to expedition and a neat manner. Each of them, however, is drawn by two horses a-breast, which is, by experience, that safest guide, found, in many countries, to be a power sufficient to break up the heaviest land; which may serve to shew the inexpediency of teams of oxen; and the necessity of laying that absurd method aside. One man, with two horses, can plough twice the ground, in the same space of time that a man, who must have a boy to drive the oxen, can with a horse and two yokes of oxen. The expence of keeping two horses is considerably less than that of keeping four oxen and a horse; and the horse substituted in the room of the oxen may be serviceable upon

† Dicendum & quæ sint duris agrestibus arma;
 Queis sine nec potuere feri, nec surgere messes.
 Vomis, & inflexi primum grave robur aratri,

Omnia quæ multo ante memor provisa repones,
 Si te digna manet divini gloria ruris, VIRG.

a variety of other occasions. To these advantages may be added that of saving a boy's wages and his board.

IN breaking up the ground the first time after it has been clayed or marled, too great a depth should carefully be avoided: between four and six inches is a sufficient depth; but a greater than six should never be taken.

LET us now consider the culture of ground for turneps. A * loose, sandy soil is the properest for them: but where it happens to be a dense, heavy one, the parts may be separated, and the soil rendered lighter, by the laying on of sand, according to the practice of many farmers, who are situated on the sea-shore. If the land is light, it must have three earths; but, if heavy, † four.

D

The

* Solum utre & solutum res utraq; (speaking of rapes and turneps) desiderat, nec densa nascitur humo. Colum. 199.

† Subactum solum pluribus iterationibus aratri vel rastri, &c. id.

NOTE. It is a certain and just observation, that turneps thrive best in a loose and light soil; for which reason when stiff lands, soon after the appearance of the turneps, have received heavy rains, and are, as it were, baked by the heat of the sun, it is highly proper to
draw

The first earth, in general, should be given in March, though some plough it before Christmas; the second after barley-sowing is over; the third a fortnight after; and the fourth a fortnight after that. Turnep-seed in ground that is remarkably dry may be sown in the middle of May*; though in some places it is the general rule to sow them from the 4th of June to the 27th, and even to the first or second week in July; but those sown from the 14th to the 25th are thought to do the best. †

It requires a good deal of practice to sow § turnep-seed well. A skilful and experienced

draw a light harrow over them to loosen the earth; but this should never be done when they are larger than walnuts. Those who never saw this practice may imagine that it must injure or eradicate the greatest part of them; but not one in 500 is hurt by it.

* If the turneps are intended to be eaten about Michaelmas; otherwise they will not stand the winter, especially if it be severe.

† O. S.

§ As farmers' servants and day-labourers have not been used to sow and hough turneps, it will be proper for three or four gentlemen, for the benefit of their tenants, to hire a journeyman gardener for nine or ten weeks; and if he makes it his business to direct one farmer one half day, and another another, the mystery will be revealed to half a county, by the means of one man, in one season. Though I cannot help thinking but I have been sufficiently clear and explicit upon this, as well as every other particular, to supersede the necessity of any such assistance,

perfor

person will sow a whole acre with a pint^{*}; whereas a person not used to this business will hardly make a quart or three pints do.

THE houghing of turneps requires a particular consideration. It is a rule in all parts where the method here recommended prevails, to have a hoe, whose helve, handle, or shaft is three feet and a half or four feet long, and whose head is from nine to eleven inches broad, and four, or not more than four inches and a half deep; and the distance of the turneps left for a crop, one from another every way, should be fourteen or fifteen inches. Turneps should be houghed twice; the first time a month or five weeks after they are sown; and the second time about a fortnight † afterwards. Though the expence of thus houghing them twice is not less in some places than five, six, or seven

* A pint and a half of new, and a quart or three pints of old seed, are the proper quantities.

† But there can be no exact limitation of time, seasons being so various: this, therefore, must be left to the prudent farmer's discretion, who will neither begin to hough while the plants are too small and tender, nor delay it till they are become too large, and have begun to injure one another.

shillings an acre ; yet the inconsiderable prime cost of the seed, and the goodness and great value of the crops make very ample amends for this great expence. People who have attempted in several parts of this kingdom the propagation of turneps, have despised the directions given them about houghing, probably, on account of the great expence of it ; and their endeavours, consequently, have never been attended with success. But if turneps are suffered to grow up without houghing, they are perfectly choaked by weeds ; are, generally, sown so thick that they hinder each other's growth, and can never be of any size : whereas if they are houghed in the manner here directed, the following consequences must flow from it : The ground will be cleared of weeds, rendered more loose and open, will be greatly enriched and meliorated ; and the apple of one turnep will be larger, more juicy, and in every respect preferable to the apples of twenty turneps that are never houghed. If therefore any of the persons, for whose service these papers are drawn up, should encourage the growth of turneps, let them carefully

fully observe the directions here given about houghing, otherwise their expectations, how sanguine soever, will infallibly be disappointed; but if they follow this advice, their ground will be like a well-cultivated garden with regard to freedom from weeds and richness of soil; they will have fine feed in the depth of winter when there is no grass, and when hay is frequently very scarce: and this food, I mean turneps, is preferable to both; for it keeps the bodies of beasts cool, and fattens them incredibly, much faster than the finest hay: it will, however, be very proper to give them a little hay every night and morning, when the weather is very inclement and severe; but, in general, turneps and straw are sufficient. If the crops of turneps are in low, moist ground, it will be the best way to pull them up, and feed the bullocks with them in some dry close that is contiguous; but when they are in hilly, dry, light grounds, the best way will be to detach and fence a part of the enclosure with hurdles, and to turn the stock that is making up for market into that separated part; and when they have fed upon the turneps in this spot a sufficient

sufficient time, the same method must be continued 'till the whole clove is fed off. If this direction is not observed a small quantity of stock will tread and destroy a large tract of turneps in a day or two, and will be perfectly cloyed with them; whereas if they are permitted to eat of but a small portion at a time, every spot even of the same field becomes a fresh course, and will be a sort of whet to them. The reason why turneps are to be pulled up in a stiff, heavy soil, and fed in some ground adjoining, is because low, moist ground should be trampled as little as possible to prevent too great a cohesion of the parts; but when the soil is loose and sandy it cannot be trod too much; for the more it is hardened and cemented the better, the more excellent the compost; and where the soil is light the feeding the turneps off will greatly enrich it.

BULLOCKS which are fed in a house will be fat much sooner than those that are fed abroad. Twenty acres will fatten a score in

* Besides the turneps would be more than half spoiled with dirt,
 a house;

a house; and the offal will be sufficient for a score sheep and as many steers; but less than thirty acres will not fatten the same number in the open field: nay some bullocks will require thirty-five or forty acres; but then it will take up two men's time and a horse to tend those in the house; and the original expence of a bullock house, the constant one of keeping it in repair, and the carrying out the dung are very considerable: so that I am inclined to determine in favour of feeding *sub dio*. But take which you will, the gain upon a medium will be five pounds a bullock.

As sending oxen away lean is a great loss to the inhabitants of any country, I must beg leave to dwell a little longer upon this particular, which, when we shall have taken a view of the many and great advantages arising from fattening them before they are sent away, will appear to deserve our consideration more than may at first be imagined. Oxen which are bought in lean in the month of September or October, and fed upon turneps 'till the beginning of April, and then
upon

upon clover and rye-grass 'till the latter end of May or the middle of June; will pay to a careful and judicious person from four to seven pounds a head for keeping, attendance, and interest of money; the land which has been impoverished by a wrong management and want of manure, will by this means be greatly improved, and of course yield much better crops; and indeed it is clear, beyond all dispute, that farming, without the assistance of grasing or a dairy, cannot be a very advantageous business; but yet the generality of farmers, who proceed in the manner here directed, prompted to it by custom and example without considering causes and effects, ascribe their great success to the growing of corn alone without tracing, tho' the more remote and less apparent, yet the greatest, not to say the only cause of it.

T H E R E is but one objection against pursuing this method of fattening oxen in Wales, viz. The great distance from the metropolis. The driving fat oxen such a number of miles would, it is apprehended, reduce them so much as to render them unsaleable.

saleable. This assertion is more plausible than true. But if it was really fact, the inconvenience might be * removed in the following manner : when the drove of beasts is got within forty or fifty miles of London, the drover may be directed by his employers to halt for ten days or a fortnight : by this means their beasts will be in better order, when they come to Smithfield, than those whose whole journey is not above 130 or 140 miles.

BUT to show farther the expediency of fattening our oxen at home, and to put the matter in the strongest light, I beg leave to mention a fact which happened about five years ago, when a parcel of lean Welsh oxen, which came from the isle of Anglesea, were sold at Barnet near London, and after that sent a hundred and twenty miles from London to be fattened. By the time they

* And if there was a constant supply of fat oxen, markets would be created in Wales as they have been in other parts of the kingdom, where people, even those of large substance, lived the greatest part of the year upon salt meat, which lays a foundation for the scurvy, and other chronical diseases that render life very burdensome, not to say intolerable.

were brought to the graſier's, they ſtood him in ſix pounds ten ſhillings a head. After they were fattened, they were ſent to Stevenage, where they were ſold, one with another, at twelve pounds a bullock ; and the graſier ſaid that he never fed any cattle, whether Scots or Engliſh, which answered ſo well. I have often heard others, as good judges in theſe matters as any men whatever, ſay, that they preferred the Welch to all other cattle.

Now if the Welch farmers, inſtead of ſending away their oxen lean, would fatten them in Wales, they could never fail of a more advantageous market than all other people whatever ; for they would be able to feed their cattle vaſtly cheaper in Wales than the Engliſh graſiers poſſibly can ; and they would buy the oxen for which the Engliſh give ſix pounds ten ſhillings, for five pounds : ſo that if oxen fed in Wales were ſold fifty ſhillings a head cheaper in Smithfield than thoſe of the ſame ſize fed in England, the Welch graſiers would ſtill be greater gainers than the Engliſh. But an Engliſh graſier, who has
four

four hundred acres of ground in his hands, gets, one year with another, one hundred and twenty pounds by this one branch of his trade. A Welsh grafter, therefore, who occupies the same number of acres, might still be a much more considerable gainer.

INSTEAD then of sending away our cattle lean, let us not only feed *them* at home, but buy from Scotland and * Ireland for the same advantageous purpose.

THOSE counties in Wales, which are the remotest from Scotland, are but a little, if any thing more distant from it than the English counties, in which great droves of Scots cattle are annually brought, and afterwards

* When this pamphlet was first published, in 1755, the importation of black cattle was prohibited by an act of parliament; but the legislature has endeavoured, since that time (how effectually I will not take upon me to say), to remove the many inconveniencies and incredible detriment occasioned to the trade of this kingdom, by that preposterous resolution. Great was my disappointment to find that a proposal, so conducive to the interest of the nation as the repeal of that act, should be opposed. The natives of Ireland however, who slaughter, one year with another, in the city of Corke, eighty thousand head of cattle for exportation, are sensible of the advantages they reap from our having forced them into a measure which has made such an amazing addition to the wealth of that country.

fattened for the use of our great metropolis. For the future, therefore, it is hoped persons of fortune will depute men of integrity and experience to go into the north to buy in large numbers of lean bullocks—Suppose at first we bring home but 5000 every autumn, and that we get no more than three pounds a bullock by them, the whole gain, besides the improvement of several thousands of acres of land, would be £. 15,000 0 0

The same number from Ireland 15,000 0 0

Ten thousand home-breds, at }
4l. a bullock, gain } 40,000 0 0

Butter — — — 20,000 0 0

Corn that might be exported }
upon a very moderate } 400,000 0 0
calculation — — —

£. 490,000 0 0

N. B. Sheep, wool, hogs, &c. are not taken into the account; and the advantages arising from the three first articles are laid so low, that, if the gentlemen and farmers in Wales were unanimously to proceed upon this plan, they might be laid, without exaggeration, at three times the sum, or a million and a half.

IF we fattened our bullocks, sheep, and hogs at home, we should, in all probability, reap greater advantages than those already mentioned. As Milford is the safest harbour in his majesty's dominions, and might, upon the plan here proposed, exhibit provisions of every sort cheaper than the ports of London, Southampton, Portsmouth, Plymouth, or even Corke; why might we not hope, if an honest and impartial representation of that truth was laid before the lords of the admiralty, that our ships of war would be ordered to take in their provisions at Milford? It would be very practicable to furnish our navy with provisions of every kind at this place fifteen *per cent.* cheaper than in any of the places where the king's ships are now victualled; and if the Bristol and Liverpool merchant ships could once be accommodated in this harbour with all, as they can even now with some necessaries, upon easier terms than they can at other ports, here would soon be established a very considerable and flourishing commerce. But it is beside my purpose to point out the many advantages that would arise to the principality of Wales, all the

the West, and a great part of the North of England, from a flourishing trade at Milford *, that being undertaken by a considerable merchant in London, a native of Wales, who intends very shortly to publish his thoughts upon this important subject. In the mean time our countrymen will do well to peruse Mr. † Whitaker's sentiments upon it. I have not the honour to be acquainted with that gentleman; but from a view of his plan, he appears to have been a person of

* Though the publication of two pamphlets written in a masterly and spirited manner, the one entitled, *A PLAIN DISQUISITION, &c.* the other (if I remember right) *AN ADDRESS TO THE GENTLEMEN, CLERGY, &c. OF THE COUNTY OF PEMBROKE*, has greatly anticipated the work here alluded to; yet as the author flatters himself, that it is in his power to throw new light upon this interesting subject, he takes this opportunity of renewing his promise; which he hopes to make good as soon as other indispensable avocations will admit.

† Projectors of the best-concerted schemes have not always met with that approbation which the utility of their proposals has deserved: witness our countryman Sir Hugh Middleton, whose scheme for supplying the metropolis with water by means of the New River, was treated with contempt in his life-time; but yet a handsome pension was settled on his posterity; and the inhabitants of London have ever since, with gratitude, esteemed the memory of so illustrious a benefactor. Mr. Whitaker scarcely lived to see his great designs take place; but Milford, which must grow rich and respectable by a proper attention to his views, will long remember him, with a just sense of the benefits they derive from his judicious plan.

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uncommon sagacity and very enlarged way of thinking; and I heartily hope every gentleman, who has it in his power, will facilitate his laudable endeavour as much as possible.

BUT, *ne sutor ultra crepidam*—I will confine myself to that subject which my situation in life has given me opportunities to study both in theory and practice.

LET US now consider the advantages arising from sowing clover and rye-grass seeds. They are indeed so great, that little or nothing is to be done in farming without them. By laying down a piece of ground, in the manner above mentioned, with clover or rye-grass, or rather with a mixture of both, in the proportion of eight pounds of clover and half a peck of rye-grass to an acre, the farmer will always be sure of fine crops, if the seasons are good; for as frequent rest is by this means given to the land, it must of course recover its lost fertility; especially if we take into the account the circumstance of feeding it off, by which it is surprisingly enriched.

riched. By this means the farmer, who may, perhaps, have no great quantity of meadow ground, will have plenty of fine hay for his horses; and in the spring the clover and rye-grass will come up three weeks or a month before his natural grass: so that as soon as his turneps are fed off, his bullocks, which he is preparing for early markets, will *live in clover*, and not only delight the eye of every spectator, but make a great addition to the owner's wealth; and all those who observe these directions will always be amply rewarded by the grateful earth, which will every year produce them a crop of wheat or barley, oats or rye, turneps or clover: so that if our lands do not, without intermission, furnish us with crops of grain, or, which is equivalent, large quantities of artificial grass, or turneps, it is owing to our ignorance and sloth, and because we do not properly cultivate * them.

* Non igitur fatigatione, quemadmodum plurimi crediderunt, nec senio; sed nostra scilicet inertia minus benigna nobis arva respondent. Licet enim majorem fructum percipere si frequenti & tempestiva & modicæ stercoratione terra refoveatur. COL.

ST. FOIN also, as it produces great crops, is a very valuable grass, and succeeds better on a dry and strong than on a light and moist soil. The land should be well summer fallowed the year before the seed is sown, ploughed and harrowed at least three times, and kept quite clean; the following year it may be sowed in April with barley: immediately after the barley is sown, sow the saint foin upon it before you harrow, and then let both be harrowed in together. When the barley is carried off, no sheep, and very little other stock, should be suffered to go upon the land for the first winter; and the spring following it must be reserved for hay; but this first crop must not be mowed 'till the flower is almost all off, and the plant beginning to seed: the succeeding year it must be mowed in the full bloom, when the flower is just beginning to drop, and the after pasture must not be fed 'till the latter end of August, or the beginning of September. No stock should go upon it after Christmas. Sheep, it is thought, hurt it much at all times. Great care must be taken in the choice of the seed;

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and

and there should be no other seed, particularly grafs seed, amongst it. It should likewise be as new as can be procured, as old seed will seldom or ever grow. Though it does not arrive at perfection in less than two or three years, yet it turns to an incredible account; and, by the help of a little manure every third or fourth winter, it will last twenty years or upwards.

As I have had little or no experience with regard to the culture of faint foin, I procured these directions from an ingenious and worthy friend, of whose knowledge and honour the reader may with safety form to himself the highest opinion.

THE method of sowing turneps, barley, clover, and wheat successively, &c. is a method so deservedly approved in some counties, that, though the lands in general are now let at ten or twelve shillings an acre, yet the farmers are allowed to make upon a medium, three times the rent, of their corn, the profits of their fat bullocks, sheep, dairy of cows, and hogs. A judgment may be
formed

formed of the number of acres annually to be appropriated to turneps, barley, clover, and wheat from this general direction.

SUPPOSE a farm, *e. g.* consists of two hundred acres of ploughed ground, exclusive of old pasture: it cannot be managed to greater advantage than by having fifty acres of turneps, fifty acres of barley, fifty acres of clover, and fifty acres of wheat. It must, however, be supposed that the farmer makes a sufficient quantity of muck to spread over the clover land; otherwise it will be as well to sow part of it with barley, oats, or white peas. Let it also be supposed that this farm, now under consideration, is, what is in many places called, a dairy farm, where there are fifty or sixty cows kept: fifty acres of turneps are highly sufficient for their winter provision, and are productive of as much profit to the farmer as the summer pasture. By this means the cows will always be kept in good order, without hay, and will be found as profitable in the winter as the summer, if that cold season be the time chosen by the farmer for their coming in with calf.

I have known many farmers let a dairy of cows, thus managed, for three pounds a year, and sometimes for three pounds ten shillings a cow, amount to very considerable sums, and very often equal to the rent of the whole farm.

THERE are some instances, indeed, where the summer pasture so greatly over-ports the ploughed ground, that the farmer is obliged to sow almost half of it with turneps, to enable him to fodder * his stock in winter. In that case the method mentioned above is not altogether an eligible one; but in all other cases it may be imitated as nearly as the nature of the farm, and the convenience of the tenant will admit.

HAVING mentioned a dairy, I would beg leave to recommend the barrel-churn, which

* A very ingenious and worthy friend writes me word, that some farmers in the county of Brecon, who lost several bullocks last winter, ascribe it to their not bleeding them before they were put to turneps; but this unhappy effect must have been owing to some other cause—perhaps a wet season: for it is not the practice of the most judicious farmers, I know, to bleed their cattle previous to their turning them into turneps.

is in the form of a common barrel, with pieces of wood called dashes in the inside to give a check to the motion of the cream. They have irons fixed to each end, and the largest of them are turned by two men, after the manner of common grinding stones. Some of these churns are of so large a size as to churn four or five stone of butter at a time.

THIS method of keeping a dairy of cows, or fattening of bullocks, or both, is so advantageous and necessary towards producing good crops of corn and turneps, that one branch cannot be carried on without the other.

BUT there is another material article, which, as it greatly contributes towards enriching of land, deserves to be attentively considered, I mean the tath of sheep.

WITH respect to the growing of corn or turneps, the benefit arising from the tath of a thousand sheep is generally estimated at
fifty

fifty pounds a year : but with regard to these harmless animals it is to be observed, that there are frequently large tracts of land, which lie uncultivated for their feed and pasturage, and which are thought absolutely necessary to continue in that state, otherwise it is imagined, that such a number could not possibly be kept ; but I am of opinion, that if the ground were ploughed and cultivated in the manner recommended in this short treatise, a much larger number * might be maintained ; which would not only be a benefit to the farmer and owner, with respect to the wool and lamb, but with respect also to the growth of corn and turneps.

IF a sheep-walk is the property of one owner, exclusive of common-rights, I think there can be no objection to a proposal for inclosing it. Sometimes, indeed, it happens that sheep-walks are upon commons, to

* The number will be in proportion to the improvement of the land.

which

which many others have a right ; and in that case they must remain as they are, unless the several proprietors agree to the expedient of inclosing ; but where there is no objection of this sort, there are the strongest reasons for adopting the method I have been recommending.

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which many others have a right and desire
to see they must remain as they are, and that
several provisions are to be made in the
income; but what there is no objection
of this kind there are the highest reasons for
repealing the method I have been telling.



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